

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: <div style="text-align: center;">100011</div> 22/F, Great Eagle Centre, 23 Harbour Road, Wanchai, HONG KONG, P.R. China CHINA PATENT AGENT(H.K.) LTD WANG, zhongzhong

PCT

**WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY**

(PCT Rule 43 bis.1)

Applicant's or agent's file reference <div style="text-align: center;">FPPEL06150022</div>		FOR FURTHER ACTION see paragraph 2 below	
International application No. <div style="text-align: center;">PCT/CN2006/000579</div>	International filing date (day/month/year) <div style="text-align: center;">31.Mar 2006 (31.03.2006)</div>	Priority date (day/month/year)	
International Patent Classification (IPC) or both national classification and IPC <div style="text-align: center;">G06F 3/033 (2006.01) i</div>			
Applicant <div style="text-align: center;">INTEL CORPORATION et al</div>			

Date of mailing 24 Dec 2007 (25.01.2007)

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application


2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Date of completion of this opinion <div style="text-align: center;">24.Dec 2006 (24.12.2006)</div>	Authorized officer <div style="text-align: center;">  CHEN Ruyang 印 </div> Telephone No. (86-10) 62085025
--	---	--

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CN2006/000579

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed
☐ filed together with the international application in electronic form
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CN2006/000579

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement:

Novelty (N)	Claims 1-20	YES
	Claims none	NO
Inventive step (IS)	Claims 1-20	YES
	Claims none	NO
Industrial applicability (IA)	Claims 1-20	YES
	Claims none	NO

2. Citations and explanations

(1) Reference is made to the following documents:

D1:CN 1595348 A 16.Mar 2005
D2:US 6703570 B1 9. Mar 2004

(2) The present invention discloses an apparatus, which comprises a switching mechanism to switch an input line between a first input voltage and a second input voltage, a pulse generator coupled to the switching mechanism to generate an electronic pulse train at a high frequency in response to the first input voltage and an electronic pulse train at a low frequency in response to the second input voltage, an oscillator circuit coupled to the pulse generator to receive the electronic pulse train, and an ultrasonic transmitter coupled to the oscillator circuit to produce an ultrasonic signal at a frequency that is a function of a frequency of the electronic pulse train.

(3) D1 discloses a remote control and radio position finding electrical white board system. The invention is composed of the strokes sensor 11, the signal pencil 15, the board eraser 16, the common writing white board 18 and the remote controller 17. The remote controller employs the general radio remote controller with at least four keys, together with the modulation module and the aerial, which transmits the remote control information. With the software interface of operating the PC remotely and wirelessly, the use can use conveniently. The influence of the external noise and the supersonic echo is eliminated, by adding the narrow pulse filter and by controlling the working period of the pulse shaping circuit. By this means, the volume of the signal pencil can be decreased.

D2 discloses a digital pen that has a writing tip, the digital pen includes an ultrasonic (US) transducer on a pen body that generates frames of US pulses toward a receiver base in response to an infrared (IR) synchronizing signal from the base. The first pulse of a frame is adjusted by a modulo of the US period τ when the time of arrival (TOA) of the first pulse varies from an expected TOA by more than $\frac{1}{2}\tau$. The TOAs of successive $i < \tau$ pulses in the frame, which are one wavelength apart from each other, are adjusted forward in time by subtracting from each pulse TOA $(i-1)\tau$, and then several of the adjusted pulse TOAs in a single frame are averaged together to determine a frame TOA. The frame TOAs from plural receivers on the base are then triangulated to determine a pen position for that frame, with the pen positions being input to a handwriting recognition module.

(4) It is obvious that the technical features which relate to "switching mechanism to switch an input line between a first input voltage and a second input voltage" and/or "an electronic pulse train at a high frequency in response to the first input voltage and an electronic pulse train at a low frequency in response to the second input voltage" in claims 1, 6 and 14 aren't disclosed by D1, D2, and further the technical solutions claimed are not obvious to a person skilled in the art on the basis of D1, D2 or their combination. Thus, claims 1, 6 and 14 have novelty under PCT Article 33(2), and have inventive step under PCT Article 33(3).

Claims 2-5 are dependent on claim 1, claims 7-13 are dependent on claim 6 and claims 15-20 are dependent on claim 14, therefore, claims 2-5, 7-13, 15-20 also meet the requirements of the PCT with respect to novelty and inventive step.

Claims 1-20 have industrial applicability under PCT Article 33(4), because the technical solutions claimed can be made or used in the industry.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: <div style="text-align: center;">100011</div> 22/F, Great Eagle Centre, 23 Harbour Road, Wanchai, HONG KONG, P.R. China CHINA PATENT AGENT(H.K.) LTD WANG, zhongzhong

PCT

**WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY**

(PCT Rule 43 *bis*.1)

Applicant's or agent's file reference <div style="text-align: center;">FPPEL06150022</div>		Date of mailing 25 JAN 2007 (25.01.2007)	
International application No. <div style="text-align: center;">PCT/CN2006/000579</div>		FOR FURTHER ACTION see paragraph 2 below	
International filing date (<i>day/month/year</i>) <div style="text-align: center;">31.Mar 2006 (31.03.2006)</div>	Priority date (<i>day/month/year</i>)		
International Patent Classification (IPC) or both national classification and IPC <div style="text-align: center;">G06F 3/033 (2006.01) i</div>			
Applicant <div style="text-align: center;">INTEL CORPORATION et al</div>			

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application


2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Date of completion of this opinion <div style="text-align: center;">24.Dec 2006 (24.12.2006)</div>	Authorized officer <div style="text-align: center;">  CHEN Ruyan 印 </div> Telephone No. (86-10) 62085025
--	---	---

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CN2006/000579

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed
☐ filed together with the international application in electronic form
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CN2006/000579

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement:

Novelty (N)	Claims 1-20	YES
	Claims none	NO
Inventive step (IS)	Claims 1-20	YES
	Claims none	NO
Industrial applicability (IA)	Claims 1-20	YES
	Claims none	NO

2. Citations and explanations

(1) Reference is made to the following documents:

D1:CN 1595348 A 16.Mar 2005
D2:US 6703570 B1 9. Mar 2004

(2) The present invention discloses an apparatus, which comprises a switching mechanism to switch an input line between a first input voltage and a second input voltage, a pulse generator coupled to the switching mechanism to generate an electronic pulse train at a high frequency in response to the first input voltage and an electronic pulse train at a low frequency in response to the second input voltage, an oscillator circuit coupled to the pulse generator to receive the electronic pulse train, and an ultrasonic transmitter coupled to the oscillator circuit to produce an ultrasonic signal at a frequency that is a function of a frequency of the electronic pulse train.

(3) D1 discloses a remote control and radio position finding electrical white board system. The invention is composed of the strokes sensor 11, the signal pencil 15, the board eraser 16, the common writing white board 18 and the remote controller 17. The remote controller employs the general radio remote controller with at least four keys, together with the modulation module and the aerial, which transmits the remote control information. With the software interface of operating the PC remotely and wirelessly, the use can use conveniently. The influence of the external noise and the supersonic echo is eliminated, by adding the narrow pulse filter and by controlling the working period of the pulse shaping circuit. By this means, the volume of the signal pencil can be decreased.

D2 discloses a digital pen that has a writing tip, the digital pen includes an ultrasonic (US) transducer on a pen body that generates frames of US pulses toward a receiver base in response to an infrared (IR) synchronizing signal from the base. The first pulse of a frame is adjusted by a modulo of the US period τ when the time of arrival (TOA) of the first pulse varies from an expected TOA by more than e -half τ . The TOAs of successive i -th $>$ pulses in the frame, which are one wavelength apart from each other, are adjusted forward in time by subtracting from each pulse TOA $(i-1)\tau$, and then several of the adjusted pulse TOAs in a single frame are averaged together to determine a frame TOA. The frame TOAs from plural receivers on the base are then triangulated to determine a pen position for that frame, with the pen positions being input to a handwriting recognition module.

(4) It is obvious that the technical features which relate to "switching mechanism to switch an input line between a first input voltage and a second input voltage" and/or "an electronic pulse train at a high frequency in response to the first input voltage and an electronic pulse train at a low frequency in response to the second input voltage" in claims 1, 6 and 14 aren't disclosed by D1 or D2, and further the technical solutions claimed are not obvious to a person skilled in the art on the basis of D1, D2 or their combination. Thus, claims 1, 6 and 14 have novelty under PCT Article 33(2), and have inventive step under PCT Article 33(3).

Claims 2-5 are dependent on claim 1, claims 7-13 are dependent on claim 6 and claims 15-20 are dependent on claim 14, therefore, claims 2-5, 7-13, 15-20 also meet the requirements of the PCT with respect to novelty and inventive step.

Claims 1-20 have industrial applicability under PCT Article 33(4), because the technical solutions claimed can be made or used in the industry.